TrendView Recorder Application Note 18:

Networking Paperless Recorders & Sharing Data

Background

The networking of electronic data recorders provides the opportunity to share data with other users, whether in real time or as an electronic file. Using the ***TrendManager Software Suite*** makes this easy to do. ***TrendServer Pro (TSP)*** allows the user to share data files by exporting the data in CSV (comma separated variable) format to third party software packages like Microsoft Excel or Lotus 123. ***TSP*** takes this to the next level by allowing the user to set up a Client-Server network, allowing multiple clients to view data from a server PC running ***TSP*** software in real time or from a database.

TSP operates and communicates with the recorders using the PC Ethernet or Serial communications port for the network connection.

Setting Up the PC for Ethernet Communications

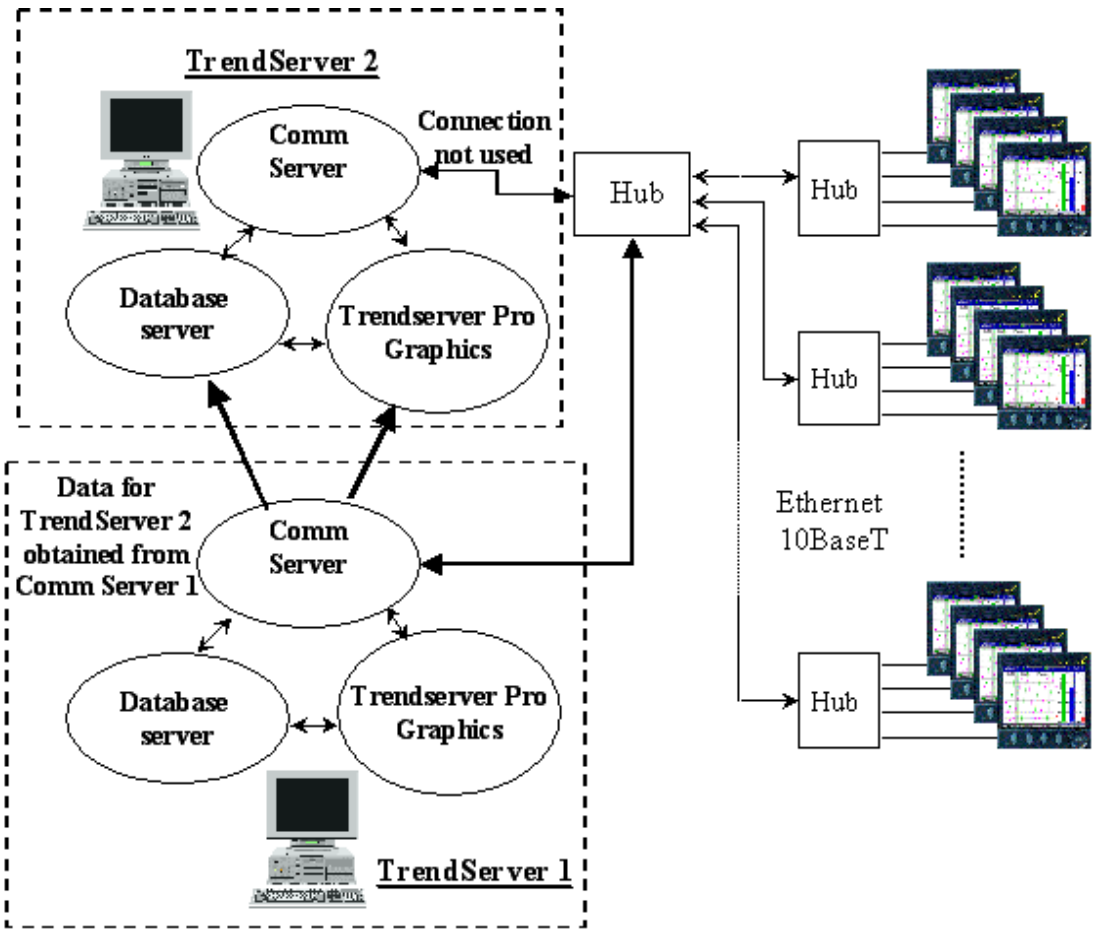
There are two common types of topology used when connecting devices into an Ethernet network. These are a star network, where a central computer manages network access, or a ring network, where users on the network can establish direct connections with other workstations. The ***TSP*** and recorders use a star network topology. Because ***TSP*** uses this type of topology, the communications server within ***TSP*** is designed so only one ***TSP*** communications server is able to access the recorders on the network at a time; otherwise there would be timing and collision issues. Because the Ethernet TCP/IP network uses a shared communications channel that is passive in nature; the Ethernet standard prescribes the rules needed to manage the nodes as they contend for the use of the network, since there is no central communications device to do this. Multiple users can view client data through distributed communications and view the data through the Server PC. The set up to use when viewing data on multiple PC's is as follows: (see *Figure 1, "Local Area Network," on page 2*)

To set up the PC for this use the following the steps.

1. Set up the PC Network Neighbourhood Properties for the TCP/IP Protocol along with the appropriate IP Address, Subnet Mask and Default Gateway, refer to *"Appendix A – Access to PC Comms Parameters" on page 18* for further details.
2. Designate a single PC as the archive for the data in ***TSP*** under logging (in this case TrendServer1, *Figure 1, "Local Area Network," on page 2*)
3. Setup ***TSP*** on that PC; enable the Communication Server to initiate data retrieval and logging of data to that PC, see *"Setting Up Ethernet Communications in TrendServer Pro" on page 6*.
4. On each of the other network PC's (Clients) that you want to be able to see the data on, enable DCOM on each of these PC's as well as the archive data PC. The DCOM (Distributed Component Object Model) is a Microsoft product that is part of the Windows™ operating systems that allow sharing of application specific data across the network. Refer to *"DCOM Configuration" on page 17* for further details

5. Once you have DCOM enabled on each network node, you can then select the "servers" tab in ***TSP*** and connect to a remote server by adding the IP address of the designated archive PC. The data on the archive PC will be viewable from the network node PC.

FIGURE 1. Local Area Network



There are a number of parameters that must be set up in the PC in order to start real time communications with the recorders over the Ethernet network. These settings vary slightly depending on the operating system installed. The settings are generally found under the Network Neighbourhood icon. In many cases, changes in these settings must be cleared with the IT Department, especially if the PC is connected to the plant-wide network. The PC's TCP/IP parameters needing to be set include:

- IP Address for the PC
- Subnet Mask (must match the subnet mask programmed for the recorders)
- Default Gateway
- COM (Distributed Communications)

Comms Server

The TMS Communications Service starts Comms Server automatically after system restart. In order to configure Comms Server for gathering data, we need to launch Communications ServerUI explicitly from StartMenu->All Programs->TrendView Recorders->TrendServer Pro->Communications Server.

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Setting Up Ethernet Communications in the Recorder

TSP uses the Trendbus protocol over an Ethernet link for realtime communications with **V5** version recorders and Modbus for realtime communications with **TrendView** recorders; Realtime communications allows data to be instantaneously displayed on a PC and logged to the local PC's database. Other remote PC's can view the data stored in this database. Once the local PC has been set up for communications, the recorder(s) must also be set up to match the network requirements for Recorder ID, Communication Port, IP Address, Subnet Mask, Default Gateway, and Protocol. These parameters are set up as part of the General Configuration parameters using the Recorder's Comms and Factory menus, see *Figure 2 on page 3*.

FIGURE 2.
V5 Recorder IP Address

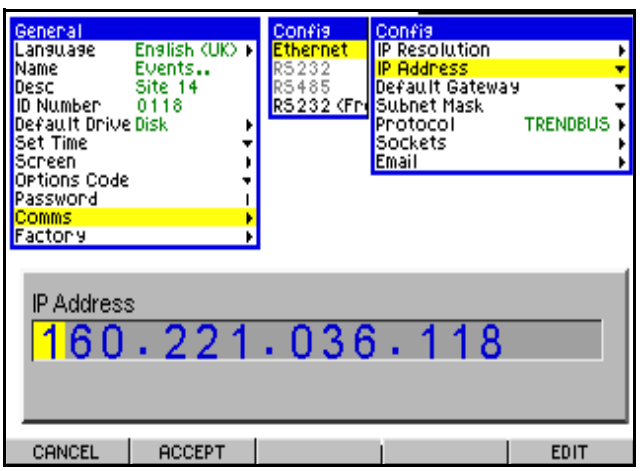
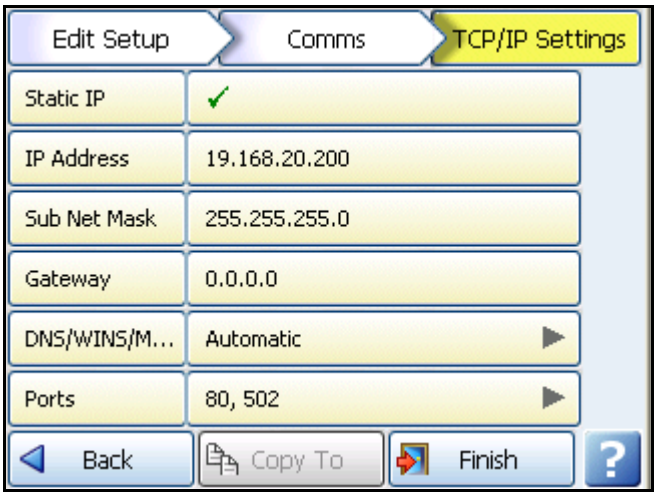


FIGURE 3.
TrendView recorder



For the TrendView recorder

Follow the Main Menu >Configure > Setup > Edit > Comms > TCP/IP.

Transmission Control Protocol/Internet Protocol.

A protocol for communication between computers, recorders and other devices.

Automatic DNS Names - The recorder will automatically register a unique Network ID using the serial number. The format is **xs-nnnnnn**, where nnnnnn is the serial number of the recorder. This allows you to locate the recorder for browsing if you are using DHCP (Dynamic Host Configuration Protocol).

TCP/IP Settings

- **Static IP** - Toggle On and Off. With this enabled the IP address will be the same every time the recorder is powered up. With this feature Off, the recorder's IP address is created dynamically using a DHCP (Dynamic Host Configuration Protocol) Server. With this feature On the IP address can be fixed by entering a known available IP address below.
- **IP Address** - (Available when Static IP is On). This is an identification address for communications between two devices. The IP Address identifies a specific recorder.
- **Sub Net Mask** - (Available when Static IP is On). Acts as a filter when identifying an IP address
- **Gateway** - (Available when Static IP is On). A configuration parameter transmitted to each network device
- **DNS/WINS/MDNS** - Set to Automatic, click on this to activate and de-activate options. DNS = Domain Name System, WINS = Windows™ Internet Name Service, MDNS = Managed Data Network Services. *See "DNS/WINS/MDNS" on page 5.*
- **Ports** - The Port numbers are associated with the IT system in use. Port numbers are set to a default but can be changed by the user to allow data traffic to use a specified port. *See "Ports" on page 5.*

DNS/WINS/MDNS

(Main Menu > Configure > Setup > Edit Setup > Comms > TCP/IP > DNS/WINS/MDNS)

Set to Automatic, click on this to activate and de-activate options. DNS = Domain Name System, WINS = Windows™ Internet Name Service, MDNS = Managed Data Network Services.

- **Auto DNS** - This is a sub menu for DNS/WINS/MDNS. Toggles On and Off. With this deactivated the DNS Server address can be changed from the default, if required.
- **Pri. DNS Address** - This is a sub menu for DNS/WINS/MDNS. Only available when Auto DNS is deactivated.
- **Sec. DNS Address** - This is a sub menu for DNS/WINS/MDNS. Only available when Auto DNS is deactivated.
- **Auto WINS** - This is a sub menu for DNS/WINS/MDNS. Toggles On and Off. With this deactivated the Windows™ Internet Name Service can be changed from the default, if required.
- **Pri. WINS Address** - This is a sub menu for DNS/WINS/MDNS. Only available when Auto WINS is deactivated.
- **Sec. WINS Address** - This is a sub menu for DNS/WINS/MDNS. Only available when Auto WINS is deactivated.
- **Auto MDNS** - This is a sub menu for DNS/WINS/MDNS. Toggles On and Off. This will deactivate the Managed Data Network Services.

When the setup is complete go back to the TCP/IP menu and complete the setup.

Ports

The port numbers are associated with the IT system in use. Port numbers are set to a default but can be changed by the user to allow data traffic to use a specified port.

- **HTTP** - HyperText Transport Protocol is the communications protocol that enables Web browsing. Select and enter the desired port number if required. (Defaults to 80)
- **Modbus** - communications protocol used for automation applications. Select and enter the desired port number if required. (Defaults to 502)

When the setup is complete go back to the TCP/IP menu to complete further Comms setup.

When the configuration is complete select the Finish button to Commit, Discard or Commit Later. Select the Back button to return to the previous menu.

Setting Up Ethernet Communications in TrendServer Pro

TSP is designed with three basic modules, plus the ability to import recorder data and configurations, as shown below. The Communications Server (3) is the critical piece used for setting up and managing the communications with devices connected on the network. The Database Server (2) manages the acquired data and is used to make it available to other applications. The third piece is the Display Generator (1) that handles the displaying of the data on the PC and the Printing, Import and Configuration portions which all reside in the ***TSP*** software.

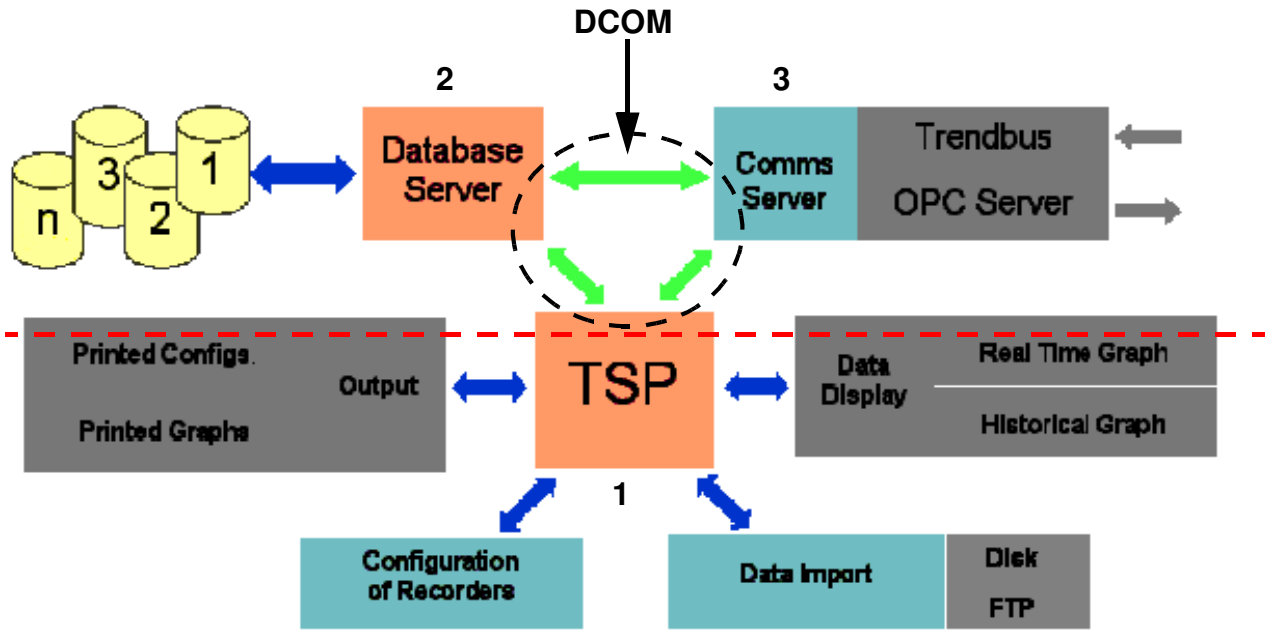
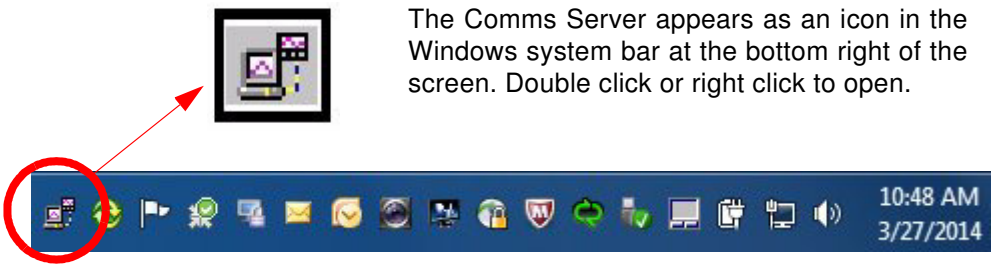


FIGURE 4. TSP Ethernet Communication

The Comms Server should be launched from Start Menu->TrendView Recorders->Trend Server Pro->Communications Server. Communications Server is shown as icon once launched. Left clicking or double clicking on the icon allows the Comms Server to be opened so the communications ports can be set up.

All Comms activity, both Logging and Realtime, can be viewed on the Comms Server



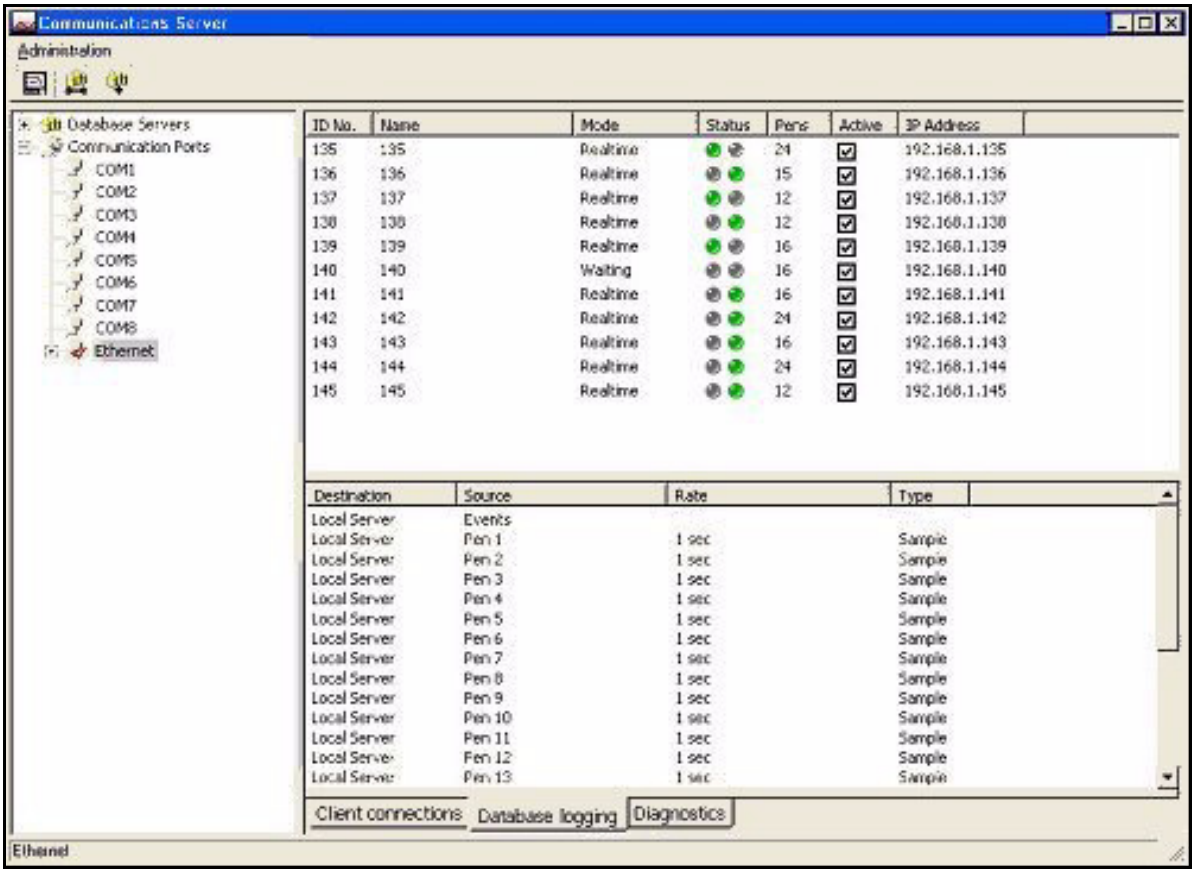
The Comms Server appears as an icon in the Windows system bar at the bottom right of the screen. Double click or right click to open.

FIGURE 5. Comms Server icon

COM1 through COM8, *Figure 5 on page 6*, are used to set up the recorders on a RS485 network, the Ethernet selection is used to set up any recorders on the Ethernet link (Select Communications Ports to enable Ethernet, shown active by a tick).

Left click on “Ethernet” and it opens a window allowing you to view the status of recorders that may already be set up, to add a recorder or to configure the logging for any particular recorder. The Comms Server window is shown below:

FIGURE 6. Communications Server



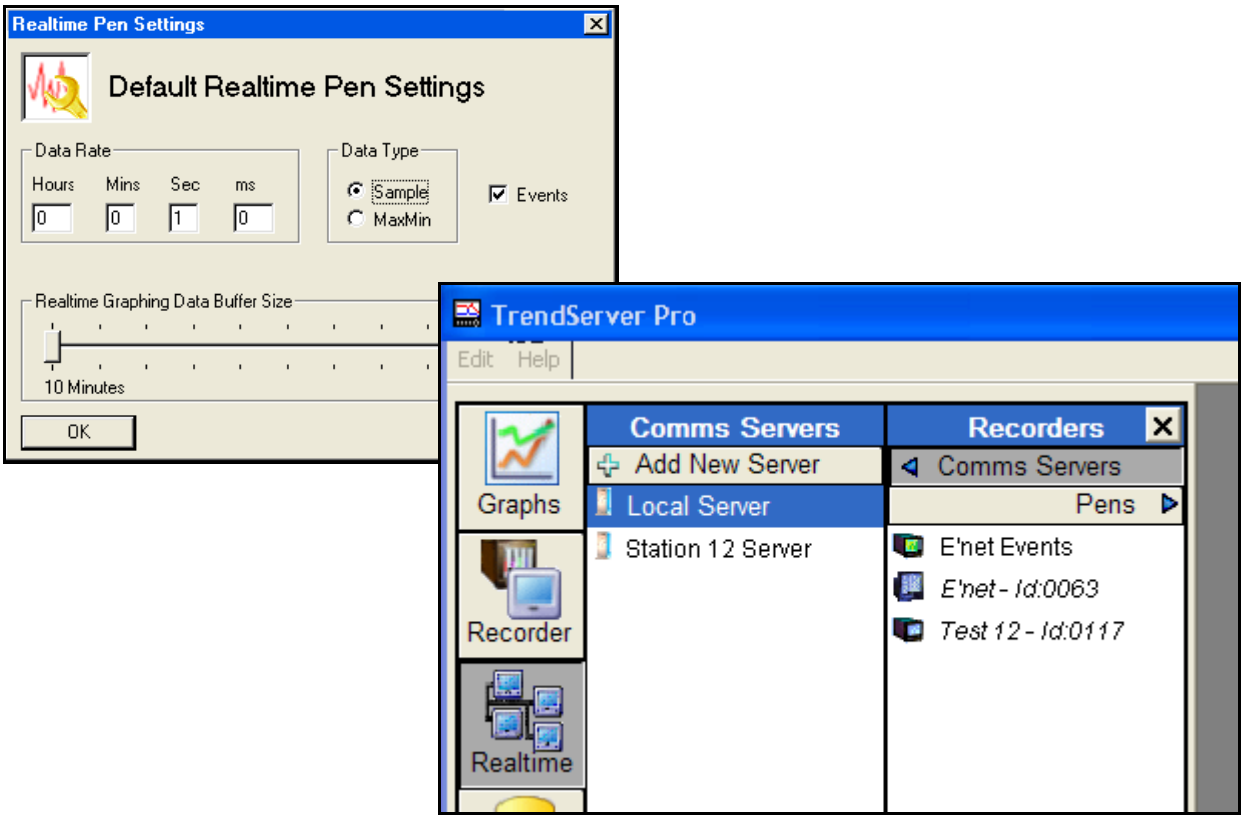
Real-time communications

For Realtime communications to occur, at least one Pen on a recorder must be enabled. The recorder status indicators in the Comms Server, *Figure 6 on page 7*, must be ‘Green’ signifying that the local network addressing and set ups are compatible and that the recorder protocol, recorder ID and hardware set up is correct. “Grey” status indicates it is waiting to connect, and red is a failed connection. If this is not working as expected, review all the settings for the PC and the recorders. A basic check would be to “PING” the recorder from the PC’s Command prompt. This would determine if the basic hardware is set up to receive a command from the PC. The command would be C:>ping XXX.XXX.XXX.XXX where the X’s represent the device IP address. If this does not return a valid response but times out, there are basic communications issues at a network level (i.e. cable wrong/defective, IP address not set properly). The command “**ipconfig”** can be used to determine the current IP address for PC’s using Windows™ 2000/XP/Vista and Windows 7.

- Open the ***TSP*** application Start->All Programs->TrendView Recorders->Trend Server Pro.
- Click on the ‘System” icon, then the Realtime icon which brings up the Default Realtime Pen Settings window. See *Figure 7 on page 8.*

- Set the Data rate, Data Type (Sample or Min/Max), Events. Click OK and close the Servers list.
- From the left hand menu bar click on the ‘Realtime’ button to display the Recorders list. Click on the Comms Servers tab to see the available Comms Servers that are connected. Select the Comms Server you wish to connect to. See *Figure 7 on page 8.*

FIGURE 7. Realtime Pen Settings and Realtime Comms Server list in TSP

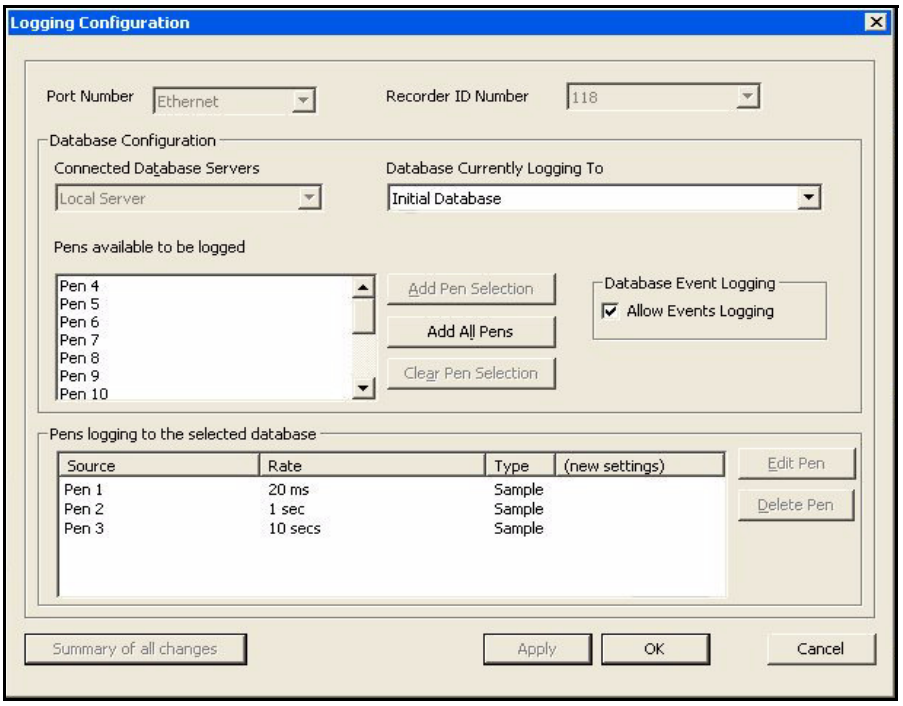


- Open the Comms Server by clicking on the Comms Server icon in the task bar at the bottom right of your PC screen.
- Right click on the Ethernet listing to add a new recorder or select the desired recorder if it is already set up and appears in the list of recorders

Comms Logging (as for Realtime Comms, plus..)

- From the Comms Server, select the Logging Configuration option by right clicking on the desired recorder
- Set up the Pens to be logged from the available list
- Set the Pen Logging rates and Type of Logging (Sample or Min/Max)
- The logging rates can be set independently for each pen
- Once these items are configured the Comms Server can be minimized (shutting down the Comms Server will stop communications).

FIGURE 8. Logging Configuration in Comms Server



Connecting to a Remote Database Server

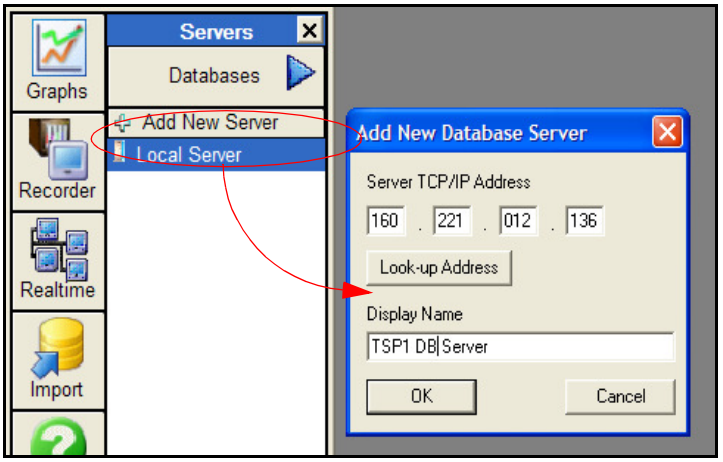
"Remote Database Server" means someone else's Database Server on a Local Area Network or a Remote network.

TSP can also be set up to view data from a remotely connected PC that is logging data from recorders that are connected locally to that PC. (*Figure 1, "Local Area Network," on page 2*). This requires ***TSP*** to be installed on both PC's and to be actively collecting data; DCOM must also be configured on both PC's to allow this distributed communications and remote viewing of the data. Once DCOM has been configured on the PC's, open ***TSP***; this allows you to set a link to the other PC.

Use the following steps:

- Click on the 'Server' icon; this opens a window to add a new server
- Click on Add New Server (the window below appears). See *Figure 9 on page 10*.
- Enter the IP address of the Remote Server and a Name for identification purposes in the space provided
- Once this is entered, the name will appear in the list of available servers, if it is active on the network, it should connect to the remote server (this could take time to occur.
- Click on the Recorder icon and drag the recorder onto the trend display (graph area to the right) to view Historical/Logged data for the recorder from this remote server (shown as blue scale indicators for comms logged data and white scale indicators for disk data).

FIGURE 9. **Adding a Database Server**



Connecting to a Remote Comms Server

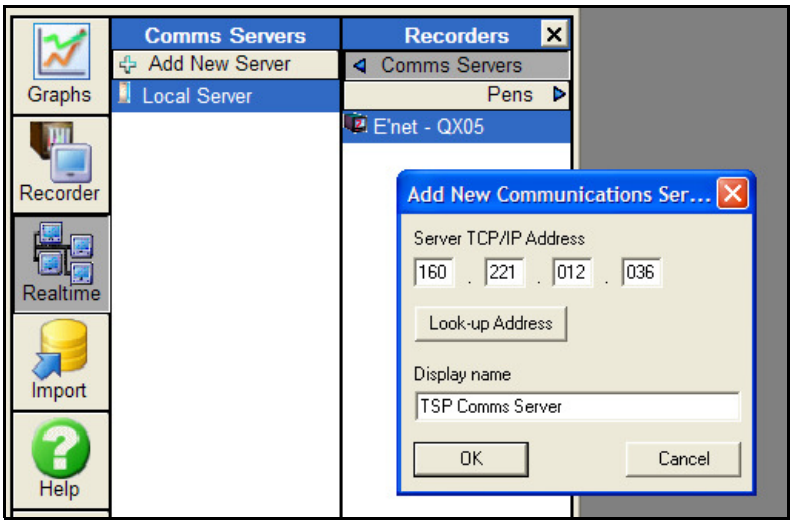
"Remote Comms Server" means someone else's Comms Server on a Local Area Network or a Remote network.

To connect to a Remote Comms Server, in order to access Realtime recorder data, the IP address of the Remote Comms Server must be known and entered into ***TSP***.

- In ***TSP***, select the Realtime Icon from the list of buttons on the left, and then select the Comms Servers tab, this will produce a list of the Servers already connected. If no other servers have been added just the Local Server will be shown. See *Figure 10 on page 10*.
- Click on Add New Server and a box will appear.
- Enter the IP Address of the Remote Comms Server you wish to access and a suitable name that will be displayed in the Servers list. If you do not know the IP address but you do have the name of the Remote Comms Server then ***TSP*** will search the Network for servers of that name.

Click on OK and the Remote Comms Server will be added to the list.

FIGURE 10. **Adding a Communications Server**



- Click on the Realtime icon and drag the recorder onto the trend display to view Realtime data for the recorder from this remote server. Realtime data is displayed with an orange scale.
- With the Remote Comms Server connected the Realtime data will begin to graph on the screen.

Once this has been done, you are now viewing data as a remote client. Multiple Clients can be set up to view the data on the server PC. These clients might represent the plant manager, quality assurance, the engineering staff or other appropriate user that can connect to the server PC. In each case, these users all need to have the DCOM setting enabled and be running ***TSP***.

Configuration for Remote Data Sharing

Below are the configuration tables for configuration to ensure data sharing between two applications of ***TSP***.

Legend for the table:

Domain: Domain network details of the Company/Organization.

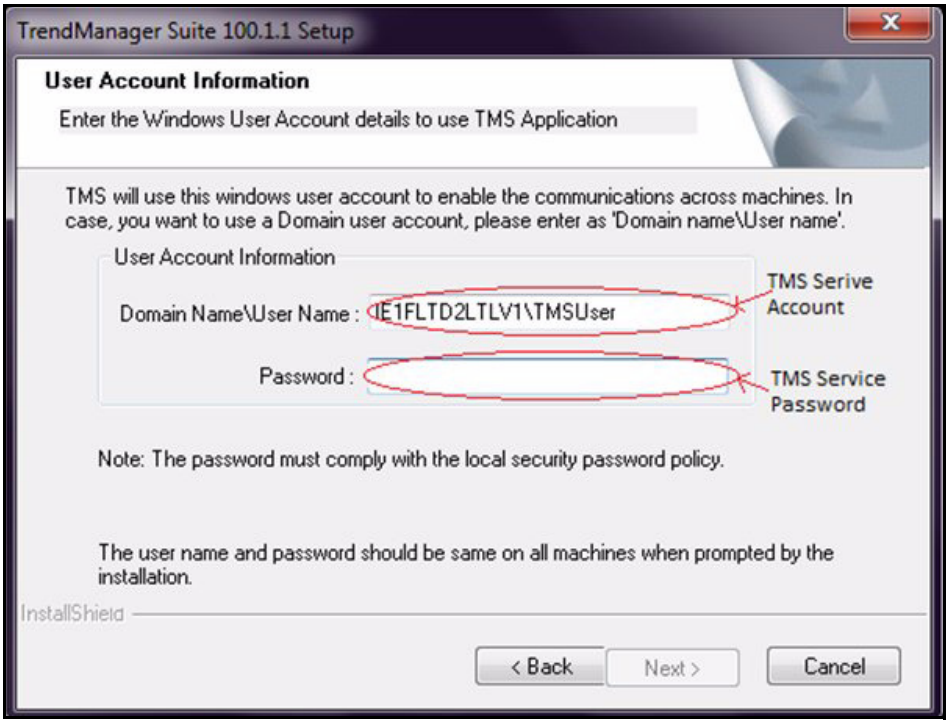
Workgroup: Peer to Peer windows computer network.

PC User Name: User name of the user who logs onto Windows to boot up the PC.

PC Password: Password for the PC User Name to logon to Windows on the PC.

TMS Service Account: User account entered at the time of TrendManager Suite Installation.

TMS Service Password: Password entered at the time of TrendManager Suite Installation.


TrendManager Suite 100.1.1 Setup
User Account Information
Enter the Windows User Account details to use TMS Application
TMS will use this windows user account to enable the communications across machines. In case, you want to use a Domain user account, please enter as 'Domain name\User name'.
User Account Information
Domain Name\User Name :
IE1FLTD2LTLV1\TMSUser
TMS Serive Account
Password :
TMS Service Password
Note: The password must comply with the local security password policy.
The user name and password should be same on all machines when prompted by the installation.
InstallShield
< Back
Next >
Cancel

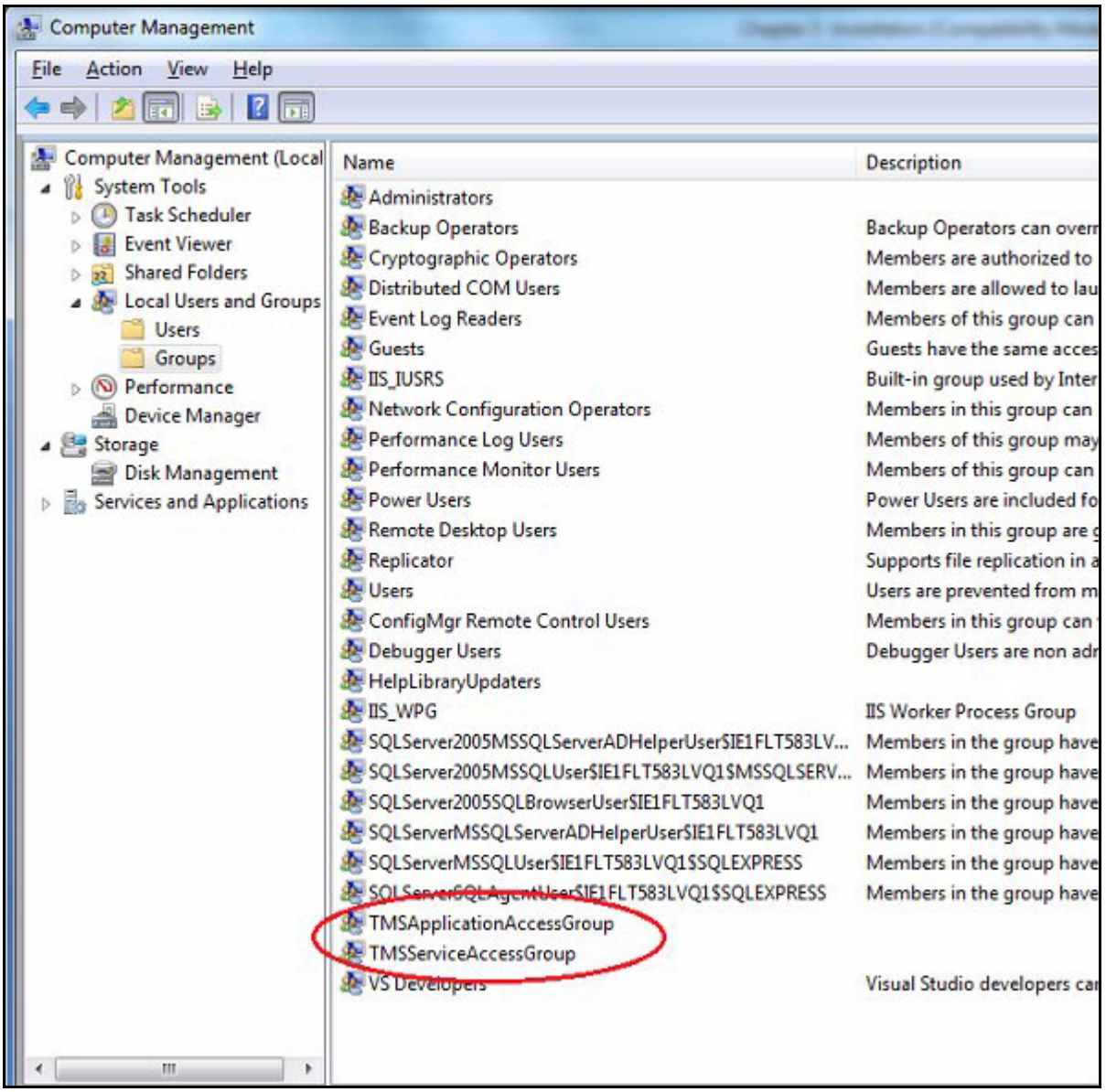
TMSApplicationAccessGroup: Any user who wants to access TrendManager Suite application, or permissions to enable the communication across computers, should be added to the TMSApplicationAccessGroup.

Here are the steps to check the group and add a user to the TMSApplicationAccess-Group:

a) Go to Control Panel -> Administrative Tools -> Computer Management.

b) Select Local Users and Groups.

c) Go to Groups. And check for TMSApplicationAccessGroup.



Configuration Table:

WorkGroup	Machine A PC User's Name	PC Password	TMS Service Account	TMS Service Password	TMSApplication AccessGroup A	WorkGroup	Machine B PC User's Name	PC Password	TMS Service Account	TMS Service Password	TMSApplication AccessGroup B	If the data sharing does not work, then ensure the following configuration is done.
LABWORK	Ted	Ted_123	MachineA\ TMSUser	TMSUser_123	Ted	LABWORK	George	Geo_123	MachineB\ TMSUser	TMSUser_123	George	1) **Add** Ted on Machine B's TMSApplicatiomnAccessGroup 2) **Add** George on Machine A's TMSApplicationAccessGroup
LABWORK	Ted	Ted_123	MachineA\ TMSUser	TMSUser_123	Ted George	LABWORK	George	Geo_123	MachineB\ TMSUser	TMSUser_123	George Ted	
LABWORK	Ted	Ted_123	MachineA\ TMSUser	TMSUser_123	Ted George	LABWORK	George	Geo_123	MachineB\ TMSUser	TMSUser_xyz	George Ted	1) Keep the TMS User password **same** on both the machine. 2) Set the same password for the TMSUser on both the machines. 3) User Security Configuration Utlity to change the password so that services are assocaited with the same password.
LABWORK	Ted	Ted_123	MachineA\ TMSUser	TMSUser_123	Ted George	LABWORK	George	Geo_123	MachineB\ TMSUser1	TMSUser_xyz	George Ted	1) **Create & Add** TMSUser1 on MachineA's TMSApplicationAccessGroup. 2) **Create & Add** TMSUser on MachineB's TMSApplicationAccessGroup.
Domain	**Machine A PC User's Name**	**PC Password**	**TMS Service Account**	**TMS Service Password**	**TMSApplication AccessGroup A**	**WorkGroup**	**Machine B PC User's Name**	**Password**	**TMS Service Account**	**TMS Service Password**	**TMSApplication AccessGroup B**	**If the data sharing does not work, then ensure the following configuration is done.**
WesternDigital	Ted	Ted_123	WesternDigital \TMSUser	TMSUser_123	Ted	LABWORK	George	Geo_123	TMSUser	TMSUser_123	George	1) **Create & Add** Ted on MachineB's TMSApplicationAccessGroup. 2) **Create & Add** George on MachineA's TMSApplicationAccessGroup
WesternDigital	Ted	Ted_123	WesternDigital \TMSUser	TMSUser_123	Ted George	LABWORK	George	Geo_123	TMSUser1	TMSUser_xyz	George Ted	1) **Create & Add** TMSUser1 on MachineA's TMSApplicationAccessGroup. 2) **Create & Add** TMSUser on MachineB's TMSApplicationAccessGroup.
Ted, George are non-adminstrators												

Configuration Table:(continued)

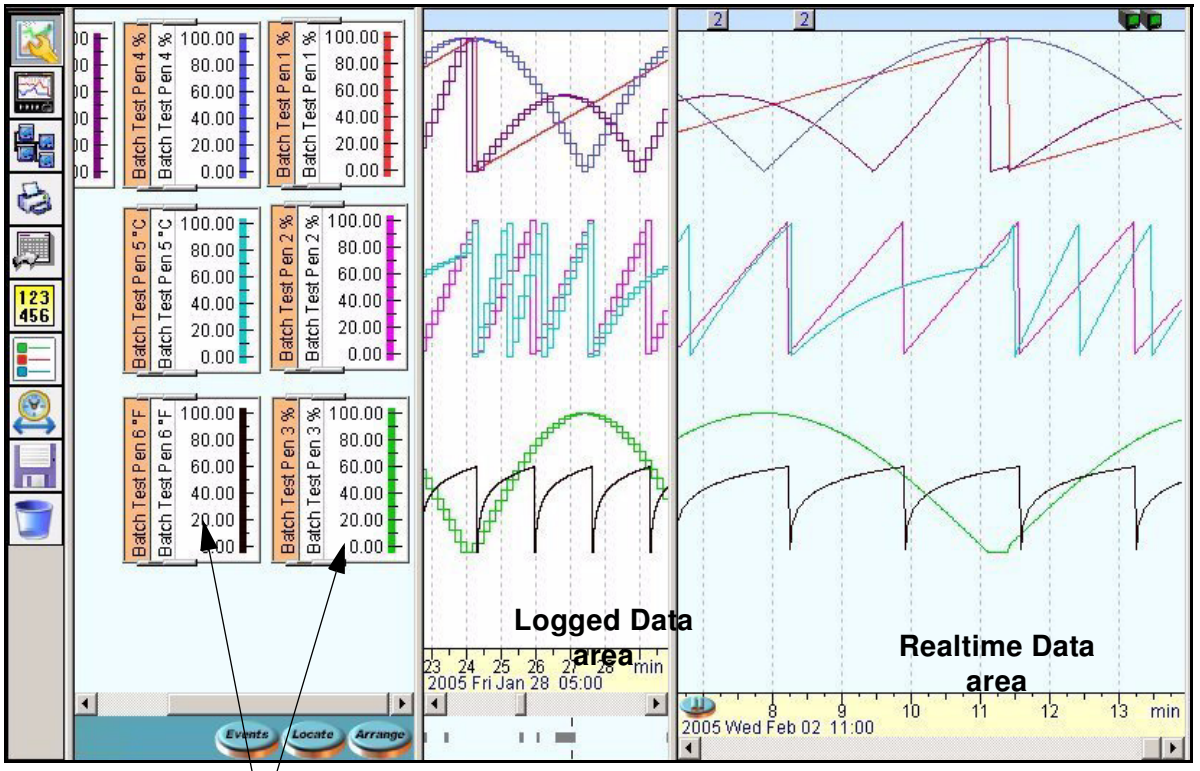
Domain	Machine A PC User's Name	PC Password	TMS Service Account	TMS Service Password	TMSApplication AccessGroup A	Domain	Machine B PC User's Name	PC Password	TMS Service Account	TMS Service Password	TMSApplication AccessGroup B	If the data sharing does not work, then ensure the following configuration is done.
WesternDigital	Ted	Ted_123	MachineA\TMSUser	TMSUser_123	Ted	WesternDigital	George	Geo_123	MachineB\TMSUser	TMSUser_123	George	1) **Add** Ted on Machine B's TMSApplicatiomnAccessGroup 2) **Add** George on Machine A's TMSApplicationAccessGroup
WesternDigital	Ted	Ted_123	MachineA\TMSUser	TMSUser_123	Ted George	WesternDigital	George	Geo_123	MachineB\TMSUser	TMSUser_123	George Ted	
WesternDigital	Ted	Ted_123	MachineA\TMSUser	TMSUser_123	Ted George	WesternDigital	George	Geo_123	MachineB\TMSUser	TMSUser_xyz	George Ted	1) Keep the TMS User password **same** on both the machine. 2) Set the same password for the TMSUser on both the machines. 3) User Security Configuration Utility to change the password so that services are assocaited with the same password.
WesternDigital	Ted	Ted_123	MachineA\TMSUser	TMSUser_123	Ted George	WesternDigital	George	Geo_123	MachineB\TMSUser1	TMSUser_xyz	George Ted	1) **Create & Add** TMSUser1 on MachineA's TMSApplicationAccessGroup. 2) **Create & Add** TMSUser on MachineB's TMSApplicationAccessGroup.
WesternDigital	Ted	Ted_123	WesternDigital\TMSUser	TMSUser_123	Ted George	WesternDigital	George	Geo_123	WesternDigital\TMSUser	TMSUser_123	George Ted	
WesternDigital	Ted	Ted_123	WesternDigital\TMSUser	TMSUser_123	Ted George	WesternDigital	George	Geo_123	WesternDigital\TMSUser1	TMSUser_xyz	George Ted	1) **Add** TMSUser1 on MachineA's TMSApplicationAccessGroup. 2) **Add** TMSUser on MachineB's TMSApplicationAccessGroup.
Ted, George are non-adminstrators												

TrendServer Pro Graphing

From the ***TSP*** Graph display, recorders can now be viewed on the trend display

- Click on the Realtime icon to display a list of recorders
- Select the desired recorder and drag it onto the graph to begin trending
- There are two areas on the ***TSP*** where recorder data can be displayed (Historical/Logged or Realtime)

FIGURE 11. TrendServer Pro Graphing window



Realtime Data = Orange scales,
Comms Logged Data = Blue scales (not shown)
Media Data = White scales

Summary

TSP provides great flexibility for setting up a communications network using **Honeywell** Paperless Recorders. ***TSP*** supports scheduled File Transfers using the FTP protocol, real time communications with a single user or networking through a client-server arrangement allowing multiple users to view the data. ***TSP*** also provides an OPC Server function allowing real time data acquisition to other HMI software packages that have an OPC Client. Getting everything correct in order to do communications over a network can be challenging, because many users are unfamiliar with setting up a network and in many cases it is an area generally left to IT.

This application note helps provide the guidance necessary to get started; providing the basic knowledge required for setting the parameters in the recorders and the PC for communications. Keep in mind, that in order for communications to work, many parameters are involved and unfortunately they must all be correct. For that reason, a final checklist is provided below that you can use as a guide for checking and double-checking.

General Checklist

- IT permission to connect devices to the network
- Administrator permission to make changes in personal PC (if necessary)
- Operating System known as it does affect set ups (Windows™ 2000 or XP Service Pack 2 / Service Pack 3, Vista and Windows 7)

PC Checklist

- IP Address of the PC being used to run ***TSP.***
- Is the IP Address in the same domain as the recorders IP address (are they on the same virtual network?).
- Is the Subnet mask set correctly (should be the same as your recorder).
- Is the Default Gateway set correctly (should be the same as your recorder).
- Is DCOM enabled for doing distributed communications.
- Can the recorder be “ping-ed” to prove the hardware is set correctly.
- ***TSP*** is available.

Recorder

- Each recorder IP address will be unique. All recorders must have different IP addresses than the other devices on the network.
- All IP addresses are unique but within the same network.
- The Subnet Mask is set correctly (should be the same as your PC).
- The Default Gateway is set correctly (should be the same as your PC).
- Each recorder has a unique non-zero Recorder ID set (such as recorder id 1001).
- The Factory Comms Ports (under General Set up) is enabled for Ethernet.
- The Protocol (under General Set up/Comms) is set for Trendbus for V5 type recorders and Modbus or Modbus X for X-Series recorders.
- The Ethernet cable is connected to the proper PC and Recorder RJ 45 connection.
- If doing one on one Ethernet communications a crossover cable is being used.

TrendServer Pro Software

- ***TSP*** is enabled, appropriate port has to be enabled, designated by a check mark on the port on the Comms Server. See *Figure 5 on page 6*.
- The Comms Server is open (icon at bottom right on PC screen).
- Recorder with its ID shows up in list under Ethernet Communications Ports.
- The IP address for the recorder matches the IP address in the recorder.
- Logging has been enabled and at least one pen is actively being logged.
- Comms Server Status indicators Green.
- The Recorder of interest has been dragged onto the trend display for viewing.

Additional references of interest:

43-TV-07-29_X-Series_AppNote4_OPC Access

43-TV-07-33_TrendView Recorders App Note 8 – DCOM Settings plus DCOM Settings for TrendView Historian Server

43-TV-07-34_TrendView Recorders App Note 9 – Modbus Communications, X & GR Series and TSP43-TV-07-41_TrendView Recorders App Note 41 – Data Acquisition

43-TV-25-11_TrendManager Suite Software Manual

43-TV-35-41_X-Series & DR Graphic reocrder User's manual

DCOM Configuration

TrendServer Pro installer automatically takes care DCOM settings. The only we need to make sure the User is added to TMSApplicationAccessGroup for more details refer user manual.

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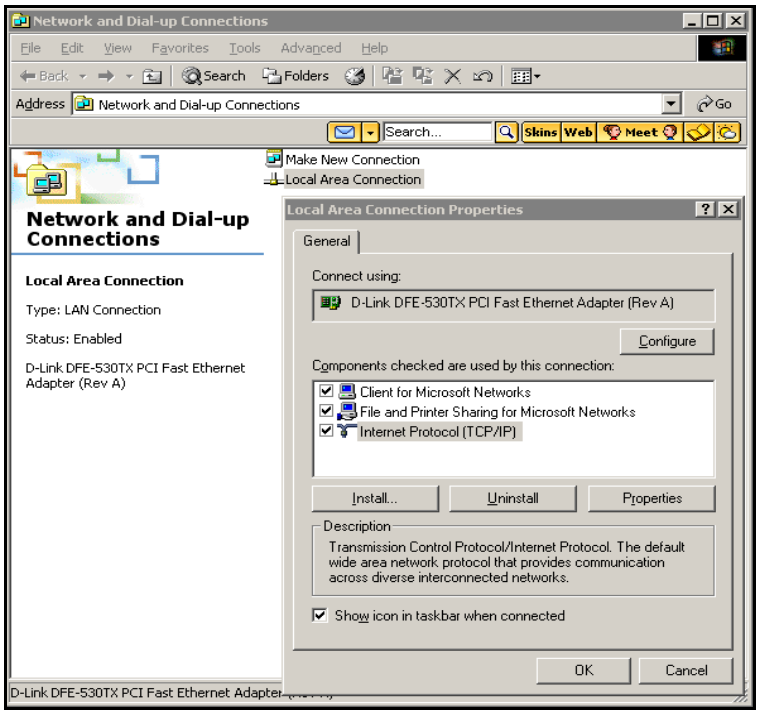
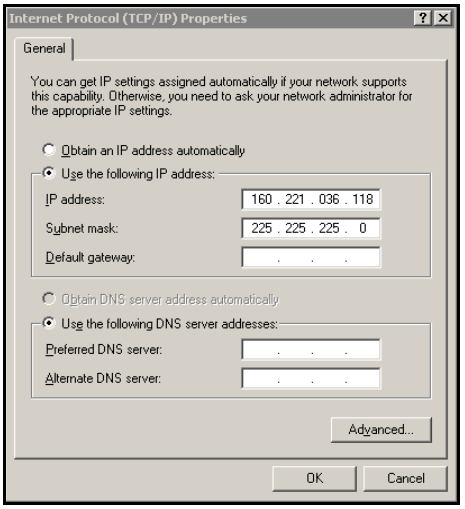
Appendix A – Access to PC Comms Parameters

Networking these devices requires the proper configuration of a number of network parameters. The PC parameters of interest are found in the “Network Neighbourhood” settings. This icon typically appears on the ‘desktop’ of the PC. If changes are going to be made to any of these settings, the user will need to have access rights to make those changes; if access is denied, then the IT (Information Technology) or LAN administrator will need to be consulted. Also, before making any changes it is best to record the current settings, especially if you plan to put the PC back on the network. The PC windows that provide the access to these settings do vary depending on the Windows™ Operating system being used; shown below are the screens from a Windows™ 2000 Operation system. To access them, follow the steps listed:

1. Select the **Start** button in the bottom left corner of the screen, select **Settings** from the next menu and then **Network and Dial-up Connection** from the next. Right click on the **Local Area Connection** displayed in the box and select properties from the menu. **The Local Area Connection Properties** box is displayed. From the list, select **Internet Protocol (TCP/IP)** and click on the properties button. The **Internet Protocol (TCPIP) Properties** box is displayed.

(The PC windows shown below are for Windows™ 2000; other Operating Systems will show similar information.)


Network and Dial-up Connections
File Edit View Favorites Tools Advanced Help
Back Search Folders
Address Network and Dial-up Connections
Go
Search...
Skins Web Meet
Make New Connection
Local Area Connection
Network and Dial-up Connections
Local Area Connection
Type: LAN Connection
Status: Enabled
D-Link DFE-530TX PCI Fast Ethernet Adapter (Rev A)
Local Area Connection Properties
General
Connect using:
D-Link DFE-530TX PCI Fast Ethernet Adapter (Rev A)
Configure
Components checked are used by this connection:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
Internet Protocol (TCP/IP)
Install... Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in taskbar when connected
OK Cancel
D-Link DFE-530TX PCI Fast Ethernet Adapter


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 160 . 221 . 036 . 118
Subnet mask: 225 . 225 . 225 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK Cancel

2. From these windows, you can see the current **IP address**, **Subnet Mask** and **Default Gateway** for the PC that you will need for setting up the Recorders and ***TSP*** software to make sure that the communications parameters are compatible.

3. These parameters can be changed but care should be exercised since any changes made can affect the ability to use the PC on the existing network.

4. You can also check the Ethernet Adapter information as follows. Go to **Start, Programs**, **Accessories**, **Command Prompt**. At the command prompt type: **IPCONFIG** (this is a Windows™ NT, 2000 and XP utility).